



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|----------------------------|------------------|
| 10/054,186 | 01/22/2002 | Geoffrey Mattson | 569-1002 | 4459 |
| 34845 | 7590 | 01/18/2006 | | |
| STEUBING MCGUINNESS & MANARAS LLP 125 NAGOG PARK ACTON, MA 01720 | | | EXAMINER BATES, KEVIN T | |
| | | | ART UNIT 2155 | PAPER NUMBER |
| DATE MAILED: 01/18/2006 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/054,186

Applicant(s)

MATTSON, GEOFFREY

Examiner

Kevin Bates

Art Unit

2155

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

This Office Action is in response to a to a communication made on December 20, 2005.

Claims 1-26 are pending in this application.

Claim Objections

Claim 17 is objected to because of the following informalities: Claim 17 is written in the means for claim language, but is dependent on claim 1, which is a method claim. This is creating a hybrid claim at claim 17 because of the mismatch and the examiner believes that claim 17 was meant to be dependent on claim 14 because claim 14 is written in the means for language and that claim 4 contains duplicate limitations as claim 17 and is already dependent on claim 1. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (6904018) in view of Chuah (9408011).

Regarding claims 1 and 14, Lee teaches a method of providing backup resources for a primary label switched path (LSP) in a label switching network (Column 2, lines 64 – 67), the primary LSP having at least a portion for transmitting data packets

containing a label from a first label switching node to a second label switching node (Column 1, lines 21 – 25), said portion including at least one intermediate label switching node between the first and second nodes (Figure 3, elements LSR2-15), the method comprising the steps of:

defining at least one backup LSP starting from the first node and merged with the primary LSP at the second node (Column 3, lines 43 – 46);

determining a transformation of the label of a packet transmitted along said portion of the primary LSP from an output of the first node to an input of the second node (Column 1, lines 27 – 31);

configuring the first node to switch a packet to the backup LSP upon detection of a failure in said portion of the primary LSP (Column 4, lines 50 – 61); and

configuring at least one node of the backup LSP to process the label of any packet transmitted along the backup LSP so as to apply said transformation (Figure 4, “looked back traffic flow after failure”).

Lee does not explicitly indicate that the packet has a label stack on which to push and pull labels from, just swapping the values of labels (Column 1, lines 27 – 31).

Chuah teaches a label routing system that includes having a label stack located in each packet being communicated in the system (Column 6, line 61 – Column 7, line 14).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Chuah’s teaching of a label stack in Lee’s system in order to allow the swapping of labels happen based on the pulling and pushing of labels onto the

stack already located in the label stack (Column 7, lines 15 – 19) not having to search a label table (Column 1, lines 27 – 31).

Regarding claims 2 and 15, Lee teaches a method as claimed in claims 1 and 14 respectively, wherein the node of the backup LSP configured to apply the transformation is the first node, said transformation being applied prior to pushing a label of the backup LSP (Column 2, lines 13 – 18).

Regarding claims 3 and 16, Lee teaches a method as claimed in claims 1 and 14 respectively, wherein the node of the backup LSP configured to apply the transformation is the second node (Figure 3, LSR8, wherein LSR8 is show to allow the transformation of the label stack to send the packets along a backup LSP).

Regarding claims 4 and 17, Lee teaches a method as claimed in claims 1 and 14 respectively wherein the step of determining the transformation of the label stack comprises transmitting messages of a signaling protocol between the nodes of said portion of the primary LSP (Column 4, lines 42 – 56), including indications of label stack manipulations performed by said nodes on packets transmitted along the primary LSP, said indications being processed at one of the first and second nodes for deriving said transformation (Column 4, lines 47 – 49).

Regarding claims 5 and 18, Lee teaches a method as claimed in claims 1 and 14 respectively, wherein the step of determining the transformation of the label stack comprises transmitting at least one sample packet from the first node to the second node along said portion of the primary LSP (Column 4, lines 42 – 56).

Regarding claims 6 and 19, Lee teaches a method as claimed in claims 1 and 14 respectively, wherein the first node is configured to switch a packet intended for the primary LSP to the backup LSP upon detection of a failure in said portion of the primary LSP up to the intermediate node situated next to the first node (Column 4, lines 50 – 61).

Regarding claims 7 and 20, Lee teaches a method as claimed in claims 1 and 14 respectively, further comprising the steps of: defining at least one switchback LSP from an intermediate node of the primary LSP to the first node (Column 4, lines 16 – 22); and configuring said intermediate node to switch a packet to the switchback LSP upon detection of a failure in said portion of the primary LSP downstream of said intermediate node and up to the node situated next to said intermediate node (Column 4, lines 16 – 22).

Regarding claim 8 and 21, Lee teaches a method as claimed in claims 7 and 20, respectively, further comprising the step of configuring the first node to switch to the backup LSP any packet received on the switchback LSP (Figure 3, the looped back traffic flow starting at node LSR 6 and travels to first node LSR 9 and 1, and travels along the backup LSP).

Regarding claims 9 and 22, Lee teaches a method as claimed in claims 8 and 20, further comprising the steps of: determining a second transformation of the label stack as the inverse of a transformation of the label stack of a packet transmitted along said portion of the primary LSP from the output of the first node to said intermediate node; and configuring at least one node of the switchback LSP to process the label

stack of any packet transmitted from said intermediate node along the switchback LSP so as to apply said second transformation (Figure 3, for the immediate nodes changing the labels to push the traffic flow back to the ingress nodes and down the back up LSP).

Regarding claims 10 and 23, Lee teaches a method as claimed in claims 9 and 22, wherein the node of the switchback LSP configured to apply the second transformation is said intermediate node, the second transformation being applied prior to pushing a label of the switchback LSP (Figure 3, for the immediate nodes changing the labels to push the traffic flow back to the ingress nodes and down the back up LSP).

Regarding claims 11 and 24, Lee teaches a method as claimed in claims 10 and 23, wherein the primary LSP has at least one additional intermediate node between the first node and said intermediate node, wherein the switchback LSP is defined to comprise the nodes of the primary LSP, in a reverse direction, from said intermediate node to the first node (Figure 3, for the immediate nodes changing the labels to push the traffic flow back to the ingress nodes and down the back up LSP).

Regarding claims 12 and 25, Lee teaches a method as claimed in claims 11 and 24, further comprising the step of configuring said additional intermediate node to switch a packet to the switchback LSP upon detection of a failure in said portion of the primary LSP downstream of said additional intermediate node and up to the node situated next to said additional intermediate node (Column 4, lines 42 – 56).

Regarding claims 13 and 26, Lee discloses a method as claimed in claims 12 and 25, further comprising the steps of: determining a third transformation of the label stack as the inverse of a transformation of the label stack of a packet transmitted along

said portion of the primary LSP from the output of the first node to said additional intermediate node; and configuring said additional intermediate node to process the label stack of any packet that it switches to the switchback LSP so as to apply said inverse transformation prior to pushing a label of the switchback LSP (Figure 3, for the immediate nodes each having to change the labels to push the traffic flow back to the ingress nodes and down the back up LSP).

Response to Arguments

Regarding the applicant's arguments against the claim objection to claim 17, the examiner has tried to clarify the claim object, while clearing up the typo involving the idea that the duplicate claim is claim 4, not claim 14 as accidentally written in the pervious office action.

Applicant's arguments filed December 20, 2005, regarding the rejection to claims 1-26 have been fully considered but they are not persuasive.

The applicant argues that the references, Lee and Chuah, as a combination would not teach all of the limitations and also that there is no motivation to combine those references.

In particular, the applicant argues that the combination do not teach the idea of "the transform of the label stack as an input to the second node." The examiner disagrees, the limitation merely states determining a transformation of the label of a packet transmitted along said portion of the primary LSP from an output of the first node to an input of the second node," the examiner, reading the broadest possible interpretation of the claim in light of the specification, reads this limitation to read that

the LSP of the network is transformed for a packet to change an output at a first node to route the packet to an input of a second node. The reference Lee, discloses a fault recovery system in a MPLS system that uses a backup LSP when the primary fails, this backup LSP takes over, changing the former route of a packet that would have traveled the primary route as seen in Figure 4, from LSR 1 to LSR 2, but due to the broken connection, the packet's route is moved from the output of LSR 1 to LSR 2, to now route the packet from LSR 1 to LSR 3, thus transforming the LSP to the backup route and changing the first node output and the second node input.

Regarding the argument that there is no motivation to combine the references, Lee and Chuah, Lee discloses a LSP system for routing packets that includes actually removing a label from the packet at every node, figuring out a label replacement, and adding a new label in the place of the old packet label. Choah teaches an improved system for label switching in a LSP system that works on LSR router includes having a Label stack, that includes all the labels necessary to route the packet through the entire network located at the packet, this allows each router to look for the next label to route the packet within the packet itself and not half to keep a database of knowledge on which direction the packet should be forwarding, eliminating processing time at each hop. Improving the performance of the network in Lee is the motivation to combine the reference with Choah, so there is proper reasons to combine the analogous art.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Bates whose telephone number is (571) 272-3980. The examiner can normally be reached on 8 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saleh Najjar can be reached on (571) 272-4006. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Application/Control Number: 10/054,186

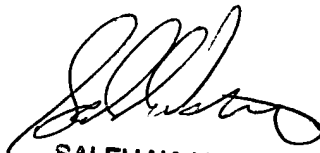
Page 10

Art Unit: 2155

KB

KB

January 10, 2006



SALEH NAJJAR
SUPERVISORY PATENT EXAMINER